ABSTRACT OF THE DISCLOSURE

A thermally enhanced Chip On Board semiconductor device with a heat sink is described. In one aspect, a thermally conducting filled gel elastomer material or a silicon elastomeric material or elastomeric material, if the material is to be removed, is applied to the die surface to which the heat sink is to be bonded. During the subsequent glob top application and curing steps, difficult-to-remove glob top material which otherwise may be misapplied to the die surface adheres to the upper surface of the elastomer material. The elastomer material is removed by peeling prior to adhesion bonding of the heat sink to the die. In another aspect, the thermally conducting filled gel elastomer material is applied between a die surface and the inside attachment surface of a cap-style heat sink to eliminate overpressure on the die/substrate interface.